STUDY REGARDING THE CREDIT INSTITUTION’S CAPITAL ADEQUACY FROM THE POINT OF VIEW OF BASEL III AGREEMENT

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Abstract

The equity’s size of a credit institution is an important factor in absorbing different shocks caused by risks manifestation and also in avoiding bank failures. This research takes into account the evolution of the level of the capital adequacy of credit institutions over the horizon of 2004-2013, through the solvency ratio, own funds and leverage ratio. The study’s results showed that although the values recorded by the capital adequacy indicators are above the minimum regulated, at the beginning of the financial crisis the level of capitalization of the Romanian banking system registered a downward trend as a result of widening credit market competition. This competition on the credit market had a great contribution to the non-government credit expansion. The results was an additional pressure on commercial banks, in conjunction with the pressure generated by the credit institutions' ability to implement during this period the two Basel agreements (Basel II and Basel III).

Keywords: *capital adequacy, solvency ratio, leverage ratio, equity, the Romanian banking system*

JEL classification: *G2, E5*

1. Introduction

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The Romanian banking system, although growing, it was affected by the financial and economic crisis firstly due to its dependence on the credit institutions that have an exposure in Romania and secondly to the affected economic environment by the variations of the exchange rate and also by the increase of the economic entities became insolvent, for which the banking system is the main creditor. The lack of toxic products on the Romanian banking market had a positive effect on the Romanian banking system, in the sense that although capital adequacy level was low, and the non-performing loans rate in the last 11 years registered an upward trend, until the present moment it were not registered bank failures or nor the government intervention in order to rescue commercial banks (see the case of Spain, Ireland, etc.). The supervisory authorities' decision to tighten the capital requirements in order to strengthen banks' ability to absorb shocks through an improved capital quality (according to the Basel III agreement and CRD IV / CRR) generated an additional pressure for credit institutions. Currently, the Romanian banking system is in the process of implementation Basel III Agreement, in order to align the entire banking system to the imposed requirements. Thus, credit institutions resorted mainly to two techniques: mergers (usually by absorption - see the merger between Transilvania Bank SA and Volksbank SA at the end of 2014) or to increase the capital by subordinated debt or contribution from shareholders.

The banking market turmoil that occurred since 2007, illustrated the banking systems' vulnerabilities and the inefficiency of Basel II agreement on avoiding numerous bank failures. Thus the supervisory authority were determined to elaborate a new legislative framework able to strengthen the banking systems' capacity to absorb any new shocks.

2. Literature Review

Considered as pioneers in the study of bank capital and risk appetite, RE Shrieves and D. Dahl, through their study conducted in 1992, had as main objective the research of the capital dependency and the risk manifestation in front of various external factors.

The research studying an optimal level of banks' capitalization were focused on many directions. A first direction was represented by the study of the level of capital adequacy from the point of view of the financial variables. According to studies made by Demsetz and Strahan (1997) and Saurina and Ayuso (2004) it was demonstrated that the important commercial banks, due to the diversity of the types of activities provided can continue their business with low rates of capital. The studies made by Groppi and Hieder in 2009 and Kleff and Weber in 2008 underlined the fact that the banks with a higher profitability tend to have a relatively higher regulatory capital. The researcher Yu in 2000 showed a significant and positive relationship between liquidity and the capital ratios, concluding the incapacity of the liquidity to cover the entire risk related to the existing portfolio.

Another line of research considered the perspective of the macroeconomic variables. The conclusion of these studies aimed mainly the effect of the national economic environment manifested over the solvency of commercial banks. The researcher Hortlund in 2005, tested the impact of inflation rate over the level of capitalization of Swedish commercial banks, demonstrating a reverse relationship between the two variables. In 1998, into a study made by Williams it was demonstrated that economic variables such as inflation rate, the variation of the exchange rate, the money supply, political instability and return on investment are regulatory capital' determinants.

The researchers Diamond and Rajan (2000) have shown that a high level of capital is likely to allow banks to be strong, able to avoid bankruptcy. In 2003, Figuet demonstrated through a study, the contribution of the credit institution' capital in order to avoid bankruptcies and also the cost of the bank rescue and restructuring.

The turbulences appeared after the outbreak of the financial crisis led supervisory authorities to strengthen the legal framework, being the reason of the Basel III Agreement elaboration. According to this Directive, at the end of the implementation period (2019) the banks' capital adequacy ratio should reach the minimum of 10.5%. This threshold has been extensively discussed in the literature review in the sense that, according to the opinion of some scientists, this threshold should be much higher. In the assumption of the researcher Hellwing M., described in a study made in 2010, the capital adequacy ratio in conjunction with some undervalued assets should be significantly higher than 10%. The researcher D. Miles in 2012, pointed out the necessity of an existed regulatory capital between 16 and 20% of risk-weighted assets according to risks involved and assumed by the banks.

According to the implementation schedule, at the end of 2019, in most European countries the minimum capital ratio (including also the conservation buffer) should be at least 10.50%. For instance in Switzerland since 2019, for the large universal banks will be mandatory to have a minimum capital requirement of 19% (of risk-weighted assets).

The main objective of the new Basel III Agreement is to increase the quality of the capital base, by supplying the level of Tier 1 ratio at 6% versus 4% minimum requirement today. An increase is also required for Tier 2 based on 4.5% compared with 2% minimum as it is now.

An indicator that is mandatory to be reported by the commercial banks respecting the Basel III and CRD IV regulations (which until now was only used for analysis by the National Bank of Romania) is leverage ratio and it is a simplified solvency indicator, based on accounting information. This ratio is considered to have a significant role in stopping the excessive expansion of the credit institutions' balance sheet. The calculation of this indicator is mandatory since 2018 as follows:

Equation (1) – The calculation methodology of leverage ratio

$$\frac{Tier\ 1\ capital}{Total\ unadjusted\ exposure} \geq 3\%$$

Source: „The new regulatory framework of the European Banking System”, Cristian Ştefan, NBR, 18.07.2013

Another legislative amendment whose main purpose is to increase the quality of capital is the changing of the own funds structure of credit institutions. According to the regulations in force, total own funds are classified in only two categories: Tier 1 and Tier 2. This caused a significant difference between the last two Agreements elaborated by the Basel Committee, because in conjunction with Basel II Agreement in the structure of the own funds were included tier 3 capital. This component of the own funds was eliminated through Basel III Agreement, causing variations in the structure of tier 1 and tier 2 capital.

3. Research Methodology

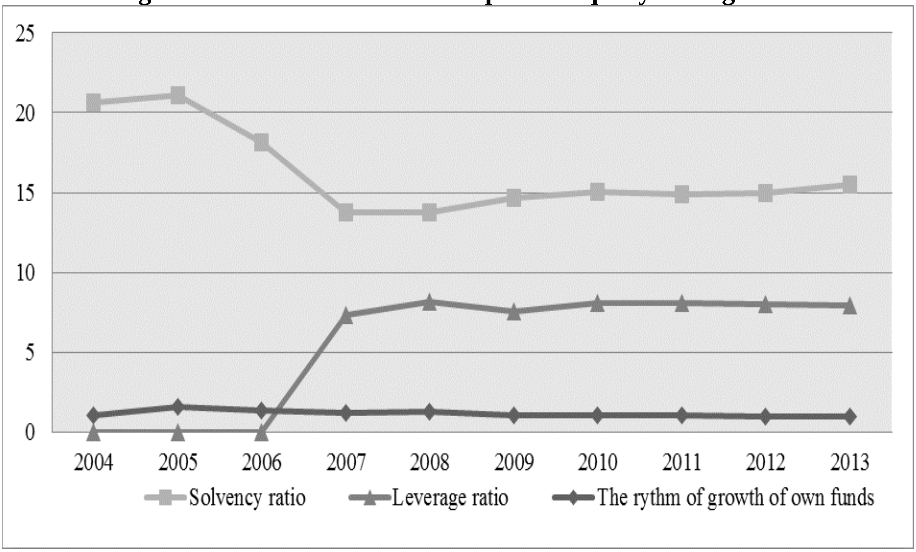
The study was based on data processing, provided by the National Bank of Romania on www.bnr.ro portal, during 2004-2013. Year 2014 was not taken in research, because according to NBR monthly bulletin elaborated in December 2014 (also available on the website http://www.bnro.ro/Publicatii-periodice-204.aspx accessed on 03.04.2014), the latest data provided by the central bank were to September 2014. For this reason, the authors considered appropriate to do a research over the period 2004-2013.

4. Study regarding the evolutions registered by the capital adequacy indicator in the Romanian banking system during 2004-2013

The analysis of the capital adequacy in the Romanian banking system focuses on studying the following indicators: indicators of solvency, leverage ratio (leverage), the own funds from the point of view of the finalization of the Basel II implementation and the beginning of the Basel III release. According to the regulations of the National Bank of Romania, it is mandatory to report the solvency level and also own funds ones for commercial banks and CreditCoop, so into the analysis it weren't included the branches of foreign banks.

The evolution of capital adequacy in the Romanian banking system, expressed by the solvency ratio and leverage, compared with growth of own funds is shown in Figure 1.

Figure 1: The evolution of the capital adequacy during 2004-2013.



Source: data processed by the authors in acordance with the monthly buletins and annual reports elaborated by NBR during 2004-2013 (www.bnr.ro)

The Figure 1 allows an overall view of the evolution of solvency ratio and leverage indicator in accordance with the growth rate of own funds. The period chosen to be analyzed includes both economical boom, the crisis and recession.

The increasing competition in the credit market in late 2006 (market share of the top five banks from the banking system in total loans increased from 55.7% at the end of 2004 to 60.5% at March 31, 2006) gave an downward trend to the solvency ratio. Its values were found significantly higher over the minimum regulated by the National Bank (12%), but also those registered in the euro area (11.50%). Despite this declining trend recorded by the solvency indicator, the own funds' level and its defining elements recorded a positive evolution, but in a lower growth rate than the one recorded by the granted loans from commercial banks. In 2007, the solvency ratio reached a historical low level. Even though at the end of 2007 in the United States appeared the first signs of the financial crisis (the occurrence of the first bankruptcies), the Romanian credit market continued its upward trend of the granted loans and assumed by commercial banks. The severe decrease of the solvency ratio recorded in 2007 was mainly due to the increasing of the financial intermediation.

The slowing down economic growth, the reducing external liquidity, the deterioration of loan portfolio due to the currency depreciation, were the first signs that the Romanian banking system has experienced in 2008 as a result of financial crisis triggered worldwide. Although the solvency ratio obtained positioned slightly above the regulatory minimum, a positive aspect was its slowing downward trend compared to previous years. Firstly this aspect is due to the capital increases made by the credit institution' shareholders and secondly because of the downward trend registered by the growth rate of the government credit. At the end of 2008, the level of the own funds recorded the lowest annual growth rate in real terms over the past six years. Ultimately this development was based on two significant changes:

- the negative registration of some financial results of certain banks that holds a share over 10% of total bank assets;
- the elimination from the calculation methodology of Tier 1 (respectively from the total own funds) of one of the most volatile element (current financial year result), due to the changes occurred in August 2008 in terms of prudential regulations.

As such the only elements that contributed to the own funds' level were the share capital and eligible reserves.

Leverage ratio (Tier 1 ratio) recorded by the banking system until the end of 2008 has reached that the banks' self-financing degree to the level of 12.50%, due to the capital increases made by credit institutions since the second half of 2008.

In 2009, the capitalization of credit institutions was at a comfortable level. According to the stress tests conducted by the National Bank of Romania, this comfortable level of the capitalization offer a better protection against the macroeconomic shocks. The stabilization of capital adequacy indicators was mainly due to the contraction of lending activities. The favorable evolution of credit institutions' own funds was one of the positive aspects of the Romanian banking system. This trend was due mainly to:

a. The increase of share capital through the contribution of the shareholders;

b. The distribution of a significant share of the net profit of the bank for provisioning;

c. Employing new loans from parent banks**.**

The level of solvency ratio in 2009 was situated at a comfortable level (14%) above the minimum imposed by national and international requirements. Achieving this level was due to following factors:

- Establishing in the surveillance process, a minimum limit of 10% for prudential adequacy indicators in accordance with the existent financing agreements concluded with the European Union, International Monetary Fund;
- Government credit contraction, as a result of the limiting demand and credit supply.

During 2009, the level of leverage had been due to market' improved perception on the Romanian banking sector. The result of the stress test applied in the same year, showed that the banking system is adequately capitalized to face unfavorable conditions caused by macroeconomic factors.

Since 2010, both capital adequacy indicators stabilized, because it wasn't registered any other significant fluctuations from year to year. Maintaining an acceptable level of solvency ratio was mainly due to:

• the NBR decision to maintain, in the supervision process from the beginning of October 2010, a minimum limit of 10% for the prudential solvency ratio;

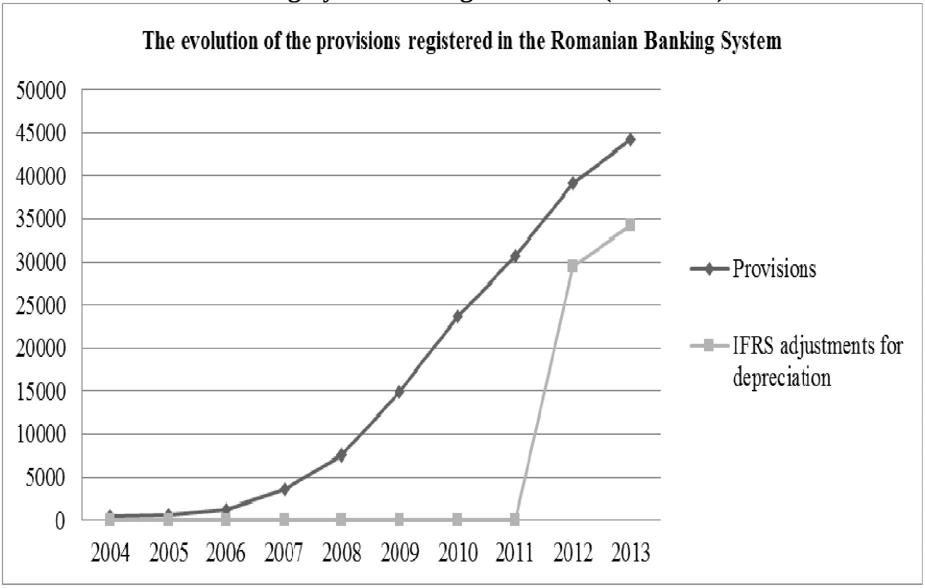
• the slowdown registered in lending and also the placement of banks' balance sheet priority in government bonds, which led to a reduction of risk-weighted assets and off-balance sheet items;

• the fulfillment of the commitment concluded between the parent banks of the nine main credit institutions with foreign capital that were operating in Romania's and National Bank of Romania to provide ex-ante additional capital. The objective of this commitment was to ensure a level of the capital adequacy ratio over 10% on the entire period of the grant agreement signed by Romania with the EU, IMF and other international financial institutions.

Adopting from 1 January 2012 by the credit institutions of the International Financial Reporting Standards (IFRS) in conjunction with the prudential regulatory requirements developed by the National Bank of Romania, have contributed to the preservation of the solvency ratio level. Accounting losses recorded by some banks, as a result of a lower operational activity and also because of the costs of establishment and provision impairment on financial assets continued, however, adversely affect the level of own funds.

One of the factors with a direct impact on the development of own funds, and hence the capital adequacy indicators is represented by the level of provisions that were made. These accounting adjustments has a significant impact on the one hand capital dimension through the influence the outcome of the credit institution, but also by the impact of risk-weighted assets prints variable included in the determination of capital adequacy indicators. During 2006-2013, the level of provisions made in the Romanian banking system is summarized in Figure 2.

Figure 2: The evolution of the provisions registered in the Romanian Banking System during 2006-2013 (milion lei)



Source: data processed by the authors in acordance with the monthly buletins elaborated by NBR during 2004-2013 (www.bnr.ro)

According to this evolution, there is an alarming increase in the level of impairment and provisions made by banks, especially with the outbreak of the financial crisis, mainly due to the significant deterioration of the quality of loan portfolios of commercial banks. The main events that led to this development are mainly: exchange rate fluctuations - the largest share of loans are denominated in foreign currencies (so the currency risk is significant); the increasing number of the companies that trigger their insolvency process; the increase in unemployment, especially of persons working in public institutions and also the loss of confidence in credit institutions**.**

5. Conclusions

The present research has shown the vulnerability of the Romanian banking system in terms of capital adequacy level, one of the main factors likely to contribute to the stability of the system. The economic boom and the significant risks that were assumed by the credit institutions, (the banks' focus only to a short-term increase in market share and therefore without having in their mind a sustainable development) have caused a decrease in the capitalization of banks. Because of this, when the crisis started the pressure felt by the banks increased. The efforts undertaken by the National Bank of Romania and by international institutions, in terms of prudential requirements have an important contribution to the stability of the Romanian banking system. Currently the Romanian banking system is in the full process of implementing the new Basel III Agreement and CRD IV/CRR legislative package. The objective of this two important regulatory framework is to supplement banks' own funds in order to increase it capacity (of the banking system) to absorb the arising shocks. However, the researchers considered that it would be difficult to align the Romanian banking system in the deadlines imposed, a better capitalization of banks is required mainly through new contributions from shareholders, a consistent increase in the loan portfolio, (meant to generate profit) and thus a reduction of the provisions made. So the two issues that can be developed in future research, namely:

- Are the shareholders tempted and able to increase own funds of credit institutions, in terms of a low performance registered by the banks?
- Can be considered the merger by absorption as a winning solution, able not to endager the financial stability of the Romanian banking system and also to generate an increased performance of the credit institution "tissue"?

Acknowledgments

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